

CERCLIS NO. TXD008070161

ABBREVIATED PRELIMINARY ASSESSMENT  
FOR  
ENERGY SERVICES GROUP  
HOUSTON, HARRIS COUNTY, TEXAS  
(TXD008070161)

August 18, 1995

Prepared for:

J. Chris Petersen  
Deputy Project Officer  
Emergency Response Branch  
EPA - Region 6

Contract Number: 68-WO-0037



**ecology and environment, inc.**

International Specialists in the Environment

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## **1.0 INTRODUCTION**

The Region 6 Technical Assistance Team (TAT) contractor, Ecology and Environment, Inc., (E & E) was tasked by the U. S. Environmental Protection Agency (EPA) under Contract Number 68-WO-0037 to conduct the Abbreviated Preliminary Assessment (PA) of the Energy Services Group facility (TXD008070161) in Houston, Harris County, Texas.

### **1.1 PRELIMINARY ASSESSMENT OBJECTIVES**

The purpose of a PA is to determine whether further investigations are warranted and to screen sites for further consideration under the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA).

The PA investigation determines CERCLA eligibility, reviews file information, documents the presence and type, or absence, of area receptors and uncontained or uncontrolled hazardous substances on-site and off-site, and documents site characteristics. Information obtained during the Preliminary Assessment supports the management decision of whether the site warrants immediate removal action, proceeds to site investigation (SI) or receives the classification of No Further Remedial Action Planned (NFRAP) under the Superfund Amendments and Reauthorization Act (SARA).

Information obtained during initial investigations did not indicate Energy Services Group stored hazardous materials on-site. Records provided by the Texas Natural Resources Conservation Commission (TNRCC) indicated hazardous materials were stored at the site from 1984 to 1987 while the facility was owned and operated by the Joy Manufacturing Company, Thornhill-Craver Division. The materials were removed in 1987 and a closure report was issued. The EPA determined that only an abbreviated PA would be necessary to complete the task for this site.

## **2.0 SITE DESCRIPTION AND OPERATIONAL HISTORY**

This section addresses operational history, waste containment, hazardous substance identification, and regulatory status of the facility.

### **2.1 SITE LOCATION**

Energy Services Group, formerly Thornhill-Craver, is located at 1111 Lockwood Drive, in Houston, Harris County, Texas. The EPA Potential Hazardous Waste Site Identification, Form 2070-8, indicates the geographical coordinates of the site are 29°46'07" north latitude and 95°19'00" west longitude (Figure 1)( Ref. 1).

### **2.2 OPERATIONAL HISTORY**

The site is located in an area of light industrial business approximately 2.1 miles east of the Houston Central Business District. The 8.863-acre tract of land is 0.9 miles north of Buffalo Bayou and is within the watershed of the bayou (Ref. 3). The site is bounded by Senora Street on the north and Clinton Drive to the south (Ref. 3). Site topography is flat.

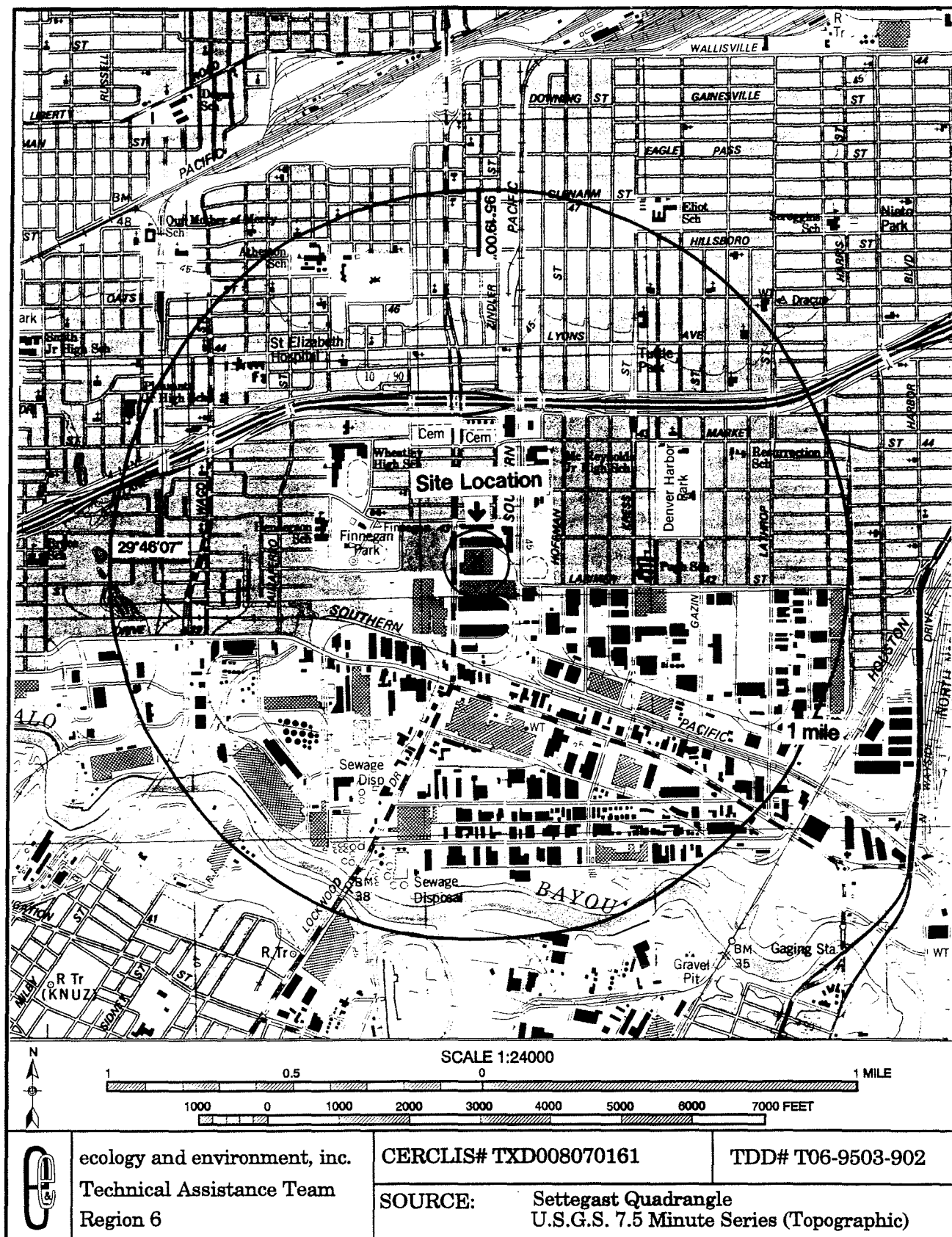


Figure 1  
 SITE LOCATION MAP  
 ENERGY SERVICES GROUP  
 HOUSTON, HARRIS COUNTY, TEXAS



The site is currently owned by Cooper Industries and operated by its Energy Services Group. The facility was previously owned by Joy Manufacturing Company, Thornhill-Craver Division. Thornhill-Craver utilized a nitriding process to harden the surfaces of steel tools used in the oil industry (Ref. 12). As a result of its treatment processes, Thornhill-Craver generated annually a maximum of one 55-gallon drum of spent material containing sodium cyanide, a Class I hazardous industrial solid waste. On November 7, 1984, the Texas Water Commission (TWC) issued Thornhill-Craver permit number HW-50012 to operate a non-commercial storage facility for ten-year storage of a maximum of ten 55-gallon drums of sodium cyanide waste (Ref. 3).

On November 19, 1986, Thornhill-Craver submitted a request to withdraw their permit and notified the TWC of their intent to discontinue the storage of sodium cyanide waste at their facility (Ref. 9)(Ref. 13). Thornhill-Craver stated that immediate steps would be taken to dispose of all sodium cyanide wastes stored on-site and properly close the permitted container storage area (Ref. 8). Thornhill-Craver submitted final closure plans and certification of closure to the TWC on July 29, 1987. The TWC acknowledged closure of the permitted facility on July 31, 1987 and accepted the certification of closure on May 6, 1988 (Ref. 13)(Ref. 14). From 1984 through 1987, a total of 3 drums of sodium cyanide waste were generated and stored on-site (Ref. 2)

On October 20, 1987, the TWC revoked the permit for on-site storage of containers (Ref. 11). The nitriding process operations were halted in December, 1987. Thornhill-Craver was purchased by Cooper Industries and the site was turned over to the new owners on February 1, 1988. A different operation was conducted at the facility (Ref. 13).

### **2.3 ERB/REMOVAL CONSIDERATIONS**

No on-site reconnaissance inspection of the facility was conducted by E & E in conjunction with the completion of this abbreviated PA. An Inspection Certification issued by McCrory Engineering, Inc. indicated the hazardous waste stored by Thornhill-Craver was properly disposed of and all steps for cleanup and equipment decontamination as outlined in the Closure and Part Closure Plan were completed in a satisfactory manner (Ref. 10).

### **2.4 REGULATORY STATUS/ACTIVITIES**

Four Industrial Solid Waste Compliance Monitoring Inspections were conducted at Thornhill-Craver by the Texas Water Commission (TWC) from 1985 to 1988. The first inspection was conducted on February 27, 1985, during which several deficiencies were noted regarding notification requirements; analysis of wastes shipped off-site and a written waste analysis plan; written operating records; completion of inspection logs; and an incomplete closure plan (Ref. 4). These deficiencies were addressed and corrected by Thornhill-Craver (Ref. 5). An industrial solid waste "special" inspection was conducted by the TWC on July 10, 1986 (Ref. 6). Two problems concerning updating the Notice of Registration and documentation of operations for the permitted drum storage area were noted and addressed further during a full Resource Conservation and Recovery Act (RCRA) inspection on September 24, 1986 (Ref. 6)(Ref. 7). The fourth inspection conducted on February 11, 1988 noted that the facility was inactive due to full facility closure and that the permitted container storage facility was certified closed on July 31, 1987 (Ref. 12).

Information available to E & E did not indicate the TWC or Texas Natural Resources Conservation Commission (TNRCC) conducted compliance inspections at Energy Services Group. There were no records indicating Energy Services Group violated state or federal regulations. Energy Services Group continues to operate under the EPA identification number and state registration number originally assigned to Thornhill-Craver.

## **2.5 SOURCE EVALUATION AND HAZARDOUS SUBSTANCE IDENTIFICATION**

Initial review of records did not indicate Energy Services Group stored hazardous materials on-site. No hazardous materials or sources associated with Thornhill-Craver's industrial processes currently exist on-site. There is no information on file with State or Federal agencies regarding violations at the site.

## **3.0 SUMMARY**

The Energy Services Group facility is located at 1111 Lockwood Drive in Houston, Texas. The geographical coordinates of the site are 29°46'07" north latitude and 95°19'00" west longitude. Available information did not indicate hazardous materials were stored on-site by Energy Services, but were stored on-site by the previous facility occupant, Thornhill-Craver. Thornhill-Craver utilized a nitriting process to harden the surfaces of steel tools used in the oil industry (Ref. 12). As a result of its treatment processes, Thornhill-Craver generated annually a maximum of one 55-gallon drum of spent material containing sodium cyanide. On November 7, 1984, the TWC issued permit HW-50012 to Thornhill-Craver to operate a non-commercial storage facility for on-site storage of up to ten 55-gallon drums of sodium cyanide wastes. From 1984 through 1987 a total of 3 drums of sodium cyanide waste were generated and stored on-site (Ref. 2).

On November 19, 1986, Thornhill-Craver submitted a request to withdraw their permit and notified the TWC of their intent to discontinue the storage of sodium cyanide waste at their facility (Ref. 8). All wastes were removed from the site premises. The site was inspected by a professional engineer for compliance with the Closure and Part Closure Plan and an inspection certification was issued on June 2, 1987 (Ref. 10). Thornhill-Craver submitted final closure plans and certification of closure to the TWC on July 29, 1987. On October 20, 1987, the TWC revoked the permit and accepted the closure. Nitriting operations were halted in December 1987, Thornhill-Craver was purchased by Cooper Industries-Energy Services Group, and the site was turned over to the new owners on February 1, 1988. A different industrial operation was conducted at the facility.

## PA DOCUMENTATION LOG SHEET

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**SITE:** ENERGY SERVICES GROUP  
**IDENTIFICATION NUMBER:** TXD008070161  
**CITY:** HOUSTON  
**STATE:** TEXAS

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REFERENCE NUMBER	DESCRIPTION OF THE REFERENCE
1	U. S. Environmental Protection Agency Potential Hazardous Waste Site Identification, Form 2070-8, April 12, 1990, TXD008070161.
2	Record of Communication. Waste Storage at Thornhill-Craver. From: Bruce Ridpath, Ecology and Environment, Inc. To: Ed Van Sickle, Plant Manager, Energy Services Group. April 11, 1995. TXD008070161.
3	Letter. Thornhill-Craver Hazardous Waste Storage Permit No. HW-50012. From: Mary Ann Hefner, Chief Clerk, Texas Department of Water Resources. To: Mr. L. R. Swanson, Thornhill-Craver Division, Joy Manufacturing Company. November 9, 1984. TXD008070161.
4	Letter. Thornhill-Craver Company, ISW Permit No. HW-50012. From: Merton J. Coloton, P.E., Supervisor, District 7, Texas Department of Water Resources. To: Mr. Bill Leeper, P.E., Chief Metallurgical Engineer, Thornhill-Craver Company. March 7, 1985. TXD008070161.
5	Letter. Ann Christley's Visit of February 7, 1985. From: W. A. Leeper, P.E., Chief Metallurgical Engineer, Thornhill-Craver Division. To: Merton J. Coloton, Supervisor, District 7, Texas Department of Water Resources. April 18, 1985. TXD008070161.
6	Interoffice Memorandum. Thornhill-Craver Company "Special" Inspection of July 10, 1986. From: Karen Bleam, Hazardous and Solid Waste Specialist, Texas Water Commission. To: Luis Campos, Hazardous and Solid Waste Liaison, Texas Water Commission. July 14, 1986. TXD008070161.
7	Letter. Thornhill-Craver Company. From: Tom Kearns, Manager, Hazardous & Solid Waste, Southeast Region, Texas Water Commission. To: Roy Ueckert, Thornhill-Craver Company. October 3, 1986. TXD008070161.



**PA DOCUMENTATION LOG SHEET****Continued**

<b>REFERENCE NUMBER</b>	<b>DESCRIPTION OF THE REFERENCE</b>
8	Letter. RCRA Liability Coverage. From: Charles L. Harman, Senior Manufacturing Engineering Specialist, WKM Division, Joy Manufacturing Company. To: Sonia Ralls, Texas Water Commission, Hazardous and Solid Waste Division. November 19, 1986. TXD008070161.
9	Letter. RCRA Liability Coverage, Thornhill-Craver, SW 50012. From: Russell S. Kimble, Chief, Reports and Management Section, Hazardous and Solid Waste Division, Texas Water Commission. To: Mr. Charles L. Harman, Engineering Specialist, WKM Division, Joy Manufacturing Company. December 11, 1986. TXD008070161.
10	Inspection Certification. Thornhill-Craver ISW Permit HW-50012. From: E. D. McCrory, Jr., P.E., McCrory Engineering, Inc. To: Charles Harman, WKM Division, Cooper Industries. June 2, 1987. TXD008070161.
11	Letter. Thornhill-Craver Hazardous Waste Storage Permit No. HW-50012. From: Larry R. Soward, Executive Director, Texas Water Commission. To: Charles L. Harman, Flow Control Division, Cooper Industries. October 20, 1987. TXD008070161.
12	Solid Waste Inspection Report. Thornhill-Craver Division. From: Laurie Schmidt, Inspector, Texas Water Commission. To: W. J. Van Evers, District 7 Manager, Texas Water Commission. March 18, 1988. TXD008070161.
13	Memorandum. Thornhill-Craver, Inc., ISW Registration Number 31157. From: Bobby Whitefield, Section Chief, Information and Technical Services, Hazardous and Solid Waste Division, Texas Water Commission. To: Laurie Schmidt, Field Investigator, Texas Water Commission, Southeast Region, Deer Park Office. March 24, 1988. TXD008070161.
14	Letter. Certification of Closure, Facility 01, Thornhill-Craver, SWR No. 31157. From: Samuel B. Pole, Chief, Hazardous and Solid Waste Enforcement Section, Hazardous and Solid Waste Division, Texas Water Commission. To: Charles L. Harman, Engineering Specialist, Cooper Industries. May 6, 1988. TXD008070161.

## **REFERENCE 1**



## POTENTIAL HAZARDOUS WASTE SITE IDENTIFICATION

REGION

SITE NUMBER

6

TXD008070161

NOTE: The initial identification of a potential site or incident should not be interpreted as a finding of illegal activity or confirmation that an actual health or environmental threat exists. All identified sites will be assessed under the EPA's Hazardous Waste Site Enforcement and Response System to determine if a hazardous waste problem actually exists.

A. SITE NAME Energy SVCS Group		B. STREET (or other identifier) 1111 Lockwood		
C. CITY Houston	D. STATE TX	E. ZIP CODE 77020	F. COUNTY NAME Harris	Code 201
G. OWNER/OPERATOR (if known) 1. NAME Edward Van Sickle Manager P. O. Box 15275/ Houston, TX/ 77220		2. TELEPHONE NUMBER 713-674-3300		
H. TYPE OF OWNERSHIP (if known) <input type="checkbox"/> 1. FEDERAL <input type="checkbox"/> 2. STATE <input type="checkbox"/> 3. COUNTY <input type="checkbox"/> 4. MUNICIPAL <input type="checkbox"/> 5. PRIVATE <input type="checkbox"/> 6. UNKNOWN				
I. SITE DESCRIPTION Lat <u>29</u> / <u>46</u> / <u>07.0</u> Lon <u>095</u> / <u>19</u> / <u>00.0</u>  RCRA Site, EPI Site, See RCRA files.				
J. HOW IDENTIFIED (i.e., citizen's complaints, OSHA citations, etc.) EPI Site --- Environmental Priorities Initiative				K. DATE IDENTIFIED (mo., day, & yr.) 4 / 12 / 90
L. SUMMARY OF POTENTIAL OR KNOWN PROBLEM  Site designated by RCRA as an EPI site, status CLOSE or CLOSURE.				
M. PREPARER INFORMATION 1. NAME Bartolome J. Canellas (6H-MA)		2. TELEPHONE NUMBER 214-655-6740		3. DATE (mo., day, & yr.) 6/14/90



## UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION 6

1445 ROSS AVENUE, SUITE 1200

DALLAS, TEXAS 75202-2733

DATE: June 18, 1990

SUBJECT: FIT Task Request

FROM: William H. Taylor (6H-MA)

TO: Ed Sierra (6E-SH)

☒ New Assignment☐ Amendment

Please task the FIT to complete the following work:

## Key EPA Contact:

Name: Bartolome J. Canellas Phone: 655-6740

## Desired Report Format:

☒ Formal Report ☐ Standard Report ☐ Other (Specify):  
☐ Letter Report ☐ Formal BriefingSSID Number: L9ZZ CERID Number: ITXD008070161EPA Site Name: Energy SVCS GroupCity/County/State: Houston/Harris/Texas

## Type of Activity:

<input type="checkbox"/> PA	<input checked="" type="checkbox"/> RCRA-PA	<input type="checkbox"/> HRS Support	<input type="checkbox"/> Enforc. Support	<input type="checkbox"/> Training
<input type="checkbox"/> SI	<input type="checkbox"/> RCRA-SI	<input type="checkbox"/> QA Support	<input type="checkbox"/> Program Manag.	<input type="checkbox"/> Gen. Tech.
<input type="checkbox"/> LSI	<input type="checkbox"/> Reasses.	<input type="checkbox"/> Spec. Stud.	<input type="checkbox"/> Equip. Main.	<input type="checkbox"/> Assist.

FIT/SCAP Goal: Will Deliverable Meet a Unit of the Goal? ☒ Yes ☐ NoPriority: High ☐ Medium ☐ Low ☒

General Task Description: Perform Preliminary Assessment for Environmental Priorities Initiative (EPI) site.

Specific Elements: \* Prepare PA using current guidance.

- \* Collect information on attached EPI outline to the extent possible while staying within the normal average manhour expenditure for a PA (120 hours). Some of the information identified would be obtained in the course of conducting a PA anyway.
- \* Information on identifying solid waste management units (SWMUs) is also attached.
- \* Identify the net worth and most recent annual sales figure for the company that owns the facility.

☒ Additional Scope Attached

SUPERFUND FILE

Concurrence: Bill Taylor  
Bill Taylor, ChiefHeather Schijf  
Heather Schijf

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## **REFERENCE 2**

## RECORD OF COMMUNICATION

Reference 02

**TYPE:** Telephone Call      **DATE:** 04/11/95      **TIME:** 11:00 a.m.  
**TO:** Mr. Ed Van Stickle, Plant Manager, Energy Services Group (713) 675-4800      **FROM:** Bruce Ridpath, Technical Assistance Team, Ecology and Environment, Inc., (713) 871-9460  
*RC/H for BR*

**SUBJECT:** Waste Storage Permit for Thornhill-Craver

### SUMMARY OF COMMUNICATION:

Energy Services Group bought Thornhill-Craver Division in 1987. Thornhill-Craver had a ten-year permit from the Texas Water Commission to store a maximum of ten 55-gallon drums of sodium cyanide waste resulting from their heat treating process. Thornhill-Craver generated three (3) drums of waste from 1984 to 1987. The waste codes for those wastes were UN 1588 and Texas state waste code 970530, P-106.

WKM-Industries of Missouri City, Texas was the contractor that wrote the closure report.

Mr. Van Stickle will try to obtain a copy of the closure report and the TAT will follow up with a phone call.

### **REFERENCE 3**

TEXAS DEPARTMENT OF WATER RESOURCES

1700 N. Congress Avenue

Austin, Texas

TEXAS WATER DEVELOPMENT BOARD

Louis A. Beecherl, Jr., Chairman  
George W. McCleskey, Vice Chairman  
Glen E. Roney  
W. O. Bankston  
Lonnie A. "Bo" Pilgrim  
Louie Welch



Charles E. Nemir  
Executive Director

TEXAS WATER COMMISSION

Paul Hopkins, Chairman  
Lee B. M. Biggart  
Ralph Roming

November 9, 1984

Mr. L. R. Swanson  
Thornhill Craver Division  
Joy Manufacturing Company  
1111 Lockwood  
P. O. Box 1184  
Houston, TX 77251-1184

RE: Permit No. HW-50012-000

Dear Mr. Swanson:

Enclosed is a certified copy of Commission Order dated November 7, 1984, together with a copy of the above-referenced Permit issued pursuant to your application and Chapter 26 of the Texas Water Code. The Permit and Order constitute official documents which should be kept in your permanent records.

In order that you may comply with monitoring requirements of your Permit, self-reporting forms and instructions will be forwarded to you from the Enforcement & Field Operations Division at an early date.

In the event Commission action was detrimental to your position, State law provides that you may file a motion for rehearing within 15 days of the attached Order. A copy of Commission Rule 273.1 - 273.7 concerning motions for rehearing is also enclosed for your information.

By copy of this letter, we are furnishing certified copies of the Order and Permit to the parties listed below.

Should you have any questions, please contact us.

Very truly yours,

TEXAS WATER COMMISSION

By

Mary Ann Hefner  
Chief Clerk

MAH:lw

Enclosures

cc w/enclosures:

TDWR District No. 7  
Pinecrest Civic Association  
Mr. Leroy Brown  
Honorable Harold V. Dutton

Solid Waste Section, TDWR  
Dr. & Mrs. Louis Robey  
Ms. Cynthia Smiley  
Mr. Jack Cox

P. O. Box 13087 Capitol Station • Austin, Texas 78711 • Area Code 512/475-3187

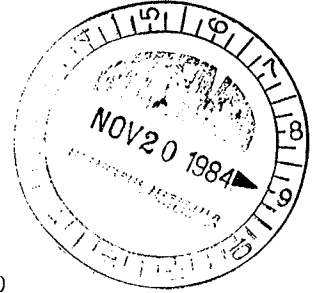




TEXAS DEPARTMENT OF WATER RESOURCES

TEXAS WATER COMMISSION

TXD008070161



AN ORDER Issuing Permit No. HW-50012-000  
to Thornhill-Craver Division, Joy Man-  
ufacturing Company for storage of Class I,  
Hazardous Industrial Solid Waste

On the 7th day of November, 1984, the Texas Water Commis-  
sion considered the application of Thornhill-Craver Division,  
Joy Manufacturing Company for a permit under Article 4477-7,  
V.T.C.S., Chapter 26 of the Texas Water Code, and applicable  
rules of the Texas Department of Water Resources to authorize  
noncommercial storage of Class I, hazardous industrial solid  
waste. The application was presented to the Commission with a  
proposal for decision by James K. Rourke, Jr., a Commission  
Hearings Examiner, who took the matter under advisement  
following a public hearing on July 25, 1984.

The Hearings Examiner designated the following as parties  
to the proceeding: Thornhill-Craver Division, Joy Manufactur-  
ing Company, applicant; the Executive Director and Public  
Interest Advocate of the Texas Department of Water Resources;  
Dr. Louis R. Robey, M.D.; Leroy Brown; and, Pinecrest Civic  
Association.

After considering the pleadings and evidence submitted  
relative to this application and the Hearings Examiner's  
proposal for decision, the Commission makes the following  
findings of fact and conclusions of law:

FINDINGS OF FACT

1. Notice of the adjudicative public hearing was  
published on June 22, 1984 in the Houston Chronicle, a newspa-  
per regularly published and generally circulated in Harris  
County, Texas, the only county in which persons reside who may  
be affected by action taken as a result of the hearing.

2. Notice of the public hearing was sent on June 5,  
1984 by first-class mail to persons who may be affected by

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action taken as a result of the hearing and to each person as required by law.

3. Due notice was given to the Secretary of State.

4. Timely notice was mailed to the applicant.

5. The application requests a permit to continue operation of a noncommercial storage facility for a maximum of ten 55-gallon drums of spent material containing sodium cyanide, a Class I hazardous industrial solid waste.

6. The storage facility and waste generated by Thornhill-Craver Division, Joy Manufacturing Company is associated with its treatment and coating of specialty components used in the oil and gas industry.

7. The storage facility is at permittee's manufacturing plant, located on an 8.863-acre tract of land at 1111 Lockwood Drive, Houston, Texas, approximately 0.9 mile north of Buffalo Bayou. The site is within the watershed of Buffalo Bayou.

8. As a result of its treatment process, the permittee generates a maximum of one 55-gallon drum of waste per annum.

9. The permittee should not store a particular drum of waste, including each of those currently stored, for more than ten years in order to assure the safety and integrity of the waste storage drums. The permittee should cause its waste storage drums to be transported to, and disposed of in, an authorized facility in accordance with state and federal regulations, at least once every ten years.

10. The permittee employs adequate security measures to safeguard the waste drums. The waste storage area is within a large steel and corrugated metal building with a concrete floor. Only authorized personnel may enter the building. After business hours the building is locked. A six-foot fence with barbed wire encloses the manufacturing plant. The applicant employs a 24-hour security guard service.

11. The permittee should store the waste drum on stable pallets, without stacking the drums, to raise the drums above

the concrete floor and to facilitate the removal of the drums in an emergency.

12. The permittee should provide financial assurance in an amount of at least \$8,000 for proper closure of the storage facility as well as transportation and disposal of any waste. The amount of financial assurance should be reassessed annually.

13. The permittee is capable of complying with applicable requirements of the Rules of the Texas Department of Water Resources.

14. Based upon the foregoing, the permittee's handling and storage of its solid waste will not cause:

- a. The discharge or imminent threat of discharge of waste into or adjacent to waters in the state;
- b. The creation or maintenance of a nuisance; or
- c. The endangerment of the public health and welfare.

#### CONCLUSIONS OF LAW

1. The public hearing was held under the authority of and in accordance with Article 4477-7, V.T.C.S., Chapter 26 of the Texas Water Code, as amended, and the applicable provisions of the Rules of the Texas Department of Water Resources.

2. The Texas Water Commission has jurisdiction to consider the application and is authorized to issue a permit for the management and storage of Class I, hazardous industrial solid waste.

3. In order to effectuate the policies of this State as set forth in Article 4477-7, V.T.C.S., and Chapter 26 of the Texas Water Code, as amended, and to administer all powers and duties described therein, the application should be granted and Permit No. HW-50012-000 issued in accordance with the terms and conditions as attached hereto.

NOW, THEREFORE, BE IT ORDERED BY THE TEXAS WATER COMMISSION THAT:

1. Permit No. HW-50012-000 is to be issued to Thornhill-Craver Division, Joy Manufacturing Company in accordance with the terms and conditions contained therein.

2. A certified copy of this Order and the attached permit shall be sent by mail to all parties.

3. If any provision, sentence, clause or phrase of this Order is for any reason held to be invalid, the invalidity of any portion shall not affect the validity of the remaining portions of the Order.

Signed this 7th day of November, 1984.

TEXAS WATER COMMISSION

Paul Hopkins  
Paul Hopkins, Chairman

Lee B. M. Biggart  
Lee B. M. Biggart, Commissioner

Ralph Roming  
Ralph Roming, Commissioner

ATTEST:

Mary Ann Hefner  
Mary Ann Hefner, Chief Clerk



TEXAS WATER COMMISSION  
Stephen F. Austin State Office Building  
Austin, Texas

PERMIT FOR INDUSTRIAL  
SOLID WASTE MANAGEMENT SITE  
issued under provisions of TEX.  
REV. CIV. STAT. ANN. art. 4477-7  
and Chapter 26 of the Texas Water Code

Name of Permittee: Thornhill-Craver Division, Joy Manufacturing Company  
1111 Lockwood  
Houston, Texas 77001

Site Owner: Thornhill-Craver Division, Joy Manufacturing Company  
1111 Lockwood  
Houston, Texas 77001

Registered Agent for Service: Joy Manufacturing Company  
c/o C T Corporation System  
Republic National Bank Building  
Dallas, Texas 75201

Classification of Site: Hazardous Waste Storage/Processing,  
Non-Commercial

The permittee is authorized to store wastes in accordance with limitations, requirements, and other conditions set forth herein. This permit is granted subject to the rules of the Department and other Orders of the Commission and laws of the State of Texas.

This permit will be valid until cancelled, amended, or revoked by the Commission, except that the authorization to store shall expire at midnight, ten years after the date of permit approval.

APPROVED, ISSUED, AND EFFECTIVE this 7th day of November,  
19 84.

ATTEST:

*May Ann Hefner*

*Paul Hopkins*  
For the Commission

NAME: Thornhill-Craver Company

APPROVED:

I. Size and Location of Site

- A. The industrial solid waste storage and transfer facility is located approximately 2.1 miles East of the Central Business District and 0.9 mile North of Buffalo Bayou in Houston, Texas at 1111 Lockwood Drive. The site is within an 8.863-acre tract out of the "Harris and Wilson Two League Grant," Abstract No. 905256, Harris County, Texas. This location is in the drainage area of Buffalo Bayou (North Latitude 29°46'07", West Longitude 95°19'00").
- B. The legal description of the site submitted in the Permit No. 50012 application dated August 18, 1980 is hereby made a part of this permit as Attachment A.

II. Facilities and Operations Authorized

- A. The permittee is authorized to store industrial solid wastes generated from plant sources, including those listed in the application as described herein. Waste from off-site sources is limited to that generated by permittee-owned facilities. Hazardous wastes are limited to those within the Hazard Code group indicated below.

1. Hazard Code groups (as prescribed by U. S. Environmental Protection Agency regulations in effect upon date of permit approval):

<u>          </u>	Ignitable (I)	<u>      x      </u>	Acute Hazardous Waste (H)
<u>          </u>	Toxic (T)	<u>          </u>	EP Toxic (E)
<u>          </u>	Corrosive (C)	<u>          </u>	Reactive (R)

2. <u>Waste Description</u>	<u>TDWR Waste Class</u>	<u>Hazard Code(s)</u>
Sodium Cyanide	I	H

- B. The permittee is authorized to operate the following facility components:

1. Container storage area for ten (10) 55-gallon drums with a capacity of 550 gallons.

- C. Authorization to continue industrial solid waste operations at this facility is contingent upon maintenance of financial assurance pursuant to Provision IV.A.

NAME: Thornhill-Craver Company

APPROVED:

- D. The facility components and operational methods authorized are limited to those described by the application and related plans and specifications. All facility components and operational methods are subject to the terms and conditions of this permit and TDWR Rules. Prior to constructing or operating any facility component in a manner which differs from the related plans and specifications, or which will expand the facility capacity within the terms of this permit, the permittee is required to:
1. Notify the TDWR and submit plans and specifications for the proposed modification or expansion; and
  2. Receive written authorization of the Executive Director.
- E. Any proposed facility modification, addition of components, or expansion in capacity which has not been addressed by the terms of this permit must be authorized in accordance with TDWR amendment rules.

### III. Facilities Design, Construction, and Operation

- A. Facility design, construction, and operation must comply with this permit, TDWR rules, and be in accordance with plans and specifications for design and operation approved by the terms of this permit. All plans and specifications for design and operation submitted with the application are approved subject to the terms of this permit and any other Orders of the Texas Water Commission.
- B. The entire waste management facility shall be designed, constructed, operated, and maintained to prevent inundation of and discharges from the areas surrounding the facility components.
- C. All pumps, fire and spill control equipment, decontamination equipment, and all other equipment and structures authorized or required by this permit shall be maintained in good functional condition.
- D. Chemical spills occurring within the confines of the hazardous waste management areas shall be promptly removed utilizing appropriate spill clean-up procedures. Spill clean-up residues (spent absorbents, contaminated water, and other contaminated clean-up materials) shall be promptly transferred to appropriate waste management containers, and, in accordance with the Texas Industrial Solid Waste Rules (31 TAC Sections 335.1. through 335.455.) shall be transported to an authorized industrial solid waste management facility for ultimate disposition.

NAME: Thornhill-Craver Company

APPROVED:

IV. Closure

- A. The permittee shall provide financial assurance in a form acceptable to the Executive Director of the TDWR in an amount not less than \$8,000. Financial assurance shall be secured and maintained in compliance with Department regulations on hazardous waste financial requirements (31 TAC Section 335.452 and 40 CFR 264 Subpart H).
- B. The permittee shall submit to the Executive Director upon request such information as may be necessary to determine the adequacy of financial assurance.
- C. Facility closure shall commence:
  - 1. Upon direction of the Texas Water Commission or the Executive Director for violation of the permit, TDWR rules, State Statutes; or
  - 2. Upon suspension, cancellation, or revocation of the terms and conditions of this permit concerning the authorization to receive and store waste materials; or
  - 3. Upon abandonment of the site; or
  - 4. Upon direction of the Executive Director for failure to secure and maintain an adequate bond or other financial assurance as required in Provision IV.A.; or
  - 5. When necessary to comply with Provision IV.D.
- D. Facility closure shall be completed according to an approved closure plan which meets the requirements of 31 TAC Section 335.452 and 40 CFR Part 264 Subpart G.
- E. Upon completion of closure, the permittee must submit to the Executive Director certification by an independent Registered Professional Engineer that the facility has been closed in accordance with the approved closure plan.

V. Standard Permit Conditions

- A. The permittee has a duty to comply with all conditions of this permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Solid Waste Disposal Act, and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application.
- B. In order to continue a permitted activity after the expiration date of the permit, the permittee must apply for a new permit or renewal. Authorization to continue such activity will terminate upon the effective denial of said application.



NAME: Thornhill-Craver Company

APPROVED:

- C. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- D. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.
- E. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.
- F. The permittee shall furnish to the Executive Director, within a reasonable time, any information which the Executive Director may request to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by this permit.
- G. The permittee shall give notice to the Executive Director prior to physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements.
- H. Written approval from the Executive Director is required before beginning any change in the permitted facility or activity that would result in noncompliance with other permit requirements.
- I. Unless specified otherwise, the permittee shall report any noncompliance which may endanger health or the environment. Report of such information shall be provided orally within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission of such information shall also be provided within 5 working days of the time the permittee becomes aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and, steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- J. Inspection and entry shall be allowed as prescribed in Texas Water Code, Chapter 26 and Chapter 27, and Section 7 of the Solid Waste Disposal Act, as applicable.
- K. 1. Monitoring samples and measurements shall be representative of the monitored activity.

NAME: Thornhill-Craver Company

APPROVED:

2. Monitoring and reporting records, including strip charts and records of calibration and maintenance, shall be retained for a period of three (3) years from the date of the record or report. This period may be extended by request of the Executive Director.
3. Records of monitoring activities shall include the following:
  - a. date, time and place of sample or measurement;
  - b. individual who collected the sample or made the measurement;
  - c. date of analysis;
  - d. the individual who made the analysis;
  - e. the technique or method of analysis; and,
  - f. the results of the analysis.
- L. Any noncompliance other than that specified above, or any required information not submitted or submitted incorrectly, shall be reported to the Executive Director as promptly as possible.
- M. This permit may be transferred only according to the provisions of 31 TAC Section 341.235 (relating to Transfer of Permits) and 31 TAC Section 341.270 (relating to Action on Application for Transfers).
- N. All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 31 TAC Section 341.317 relating to Signatories to Reports.
- O. This permit may be amended, suspended and reissued, or revoked for cause. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
- P. This permit does not convey any property rights of any sort, or any exclusive privilege.
- Q. Monitoring results shall be provided at the intervals specified elsewhere in this permit.
- R. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
- S. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.

NAME: Thornhill-Craver Company

APPROVED:

- T. The permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency order issued by the Commission.
- U. For a new facility, the permittee shall not commence storage, processing or disposal of solid waste; and for a facility being modified, the permittee shall not process, store or dispose of solid waste in the modified portion of the facility, until:

1. The permittee has notified the local TDWR District Office and submitted to the Executive Director by certified mail or hand delivery a certification prepared and sealed by a professional engineer with current registration pursuant to the Texas Engineering Practice Act, and signed by the permittee. Required certification shall be in the following form:

This is to certify that construction of the following facility components authorized or required by TDWR Permit No. 50012 has been completed, and that construction of said facilities has been performed in accordance with and in compliance with the design and construction specifications of Permit No. 50012:

(Description of facility components with reference to applicable permit provisions), and

2. The Executive Director has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or within 15 days of submission of the letter required by Provision V.U.1., the permittee has not received notice from the Executive Director of an intent to inspect, prior inspection is waived and the permittee may commence processing, storage or disposal of solid waste.
- V. The following shall be included as information which must be reported orally within 24 hours pursuant to Provision V.I.:
1. Information concerning release of any solid waste that may cause an endangerment to public drinking water supplies.
  2. Any information of a release or discharge of solid waste, or of a fire or explosion from a facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:
    - a. name, address, and telephone number of the owner or operator;
    - b. name, address, and telephone number of the facility;
    - c. date, time and type of incident;

NAME: Thornhill-Craver Company

APPROVED:

- d. name and quantity of material(s) involved;
- e. the extent of injuries, if any;
- f. an assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
- g. estimated quantity and disposition of recovered material that resulted from the incident.

- W. The Executive Director may waive the five-day written notice requirement as specified in Provision V.I. in favor of a written report submitted to the Department within 15 days of the time the permittee becomes aware of the noncompliance or condition.
- X. An annual report must be submitted covering facility activities during the previous calendar year.
- Y. Emissions from this facility must not cause or contribute to a condition of "air pollution" as defined in Section 1.03 of the Texas Clean Air Act or violate Section 4.01 of the Texas Clean Air Act, Article 4477-5, V.A.T.S. If the Executive Director of the Texas Air Control Board determines that such a condition or violation occurs, the permittee shall implement additional abatement measures as necessary to control or prevent the condition or violation.
- Z. No discharge of industrial solid waste is authorized by this permit from this facility into water in the state.

#### VI. Incorporated Regulatory Requirements

- A. The following Texas Department of Water Resources regulations are hereby made provisions and conditions of this permit:
  - 1. 31 TAC Section 335.453;
  - 2. 31 TAC Section 335.454; and
  - 3. 31 TAC Section 335.455.
- B. In the extent applicable to the activities authorized by this permit, the following provisions of 40 CFR Part 264, adopted by reference at 31 TAC Section 335.452, are hereby made provisions and conditions of this permit, except as otherwise provided in 31 TAC Sections 335.12, 335.15, and 335.453-335.455, and to the extent consistent with the Solid Waste Disposal Act, Article 4477-7, Revised Civil Statutes, and the Rules of the Texas Water Development Board:
  - 1. Subpart B -- General Facility Standards;
  - 2. Subpart C -- Preparedness and Prevention;

NAME: Thornhill-Craver Company

APPROVED:

3. Subpart D -- Contingency Plan and Emergency Procedures;
4. Subpart E -- Manifest System, Recordkeeping, and Reporting;
5. Subpart G -- Closure and Post - Closure;
6. Subpart H -- Financial Requirements; and
7. Subpart I -- Use and Management of Containers.

VII. Other Requirements

- A. Permittee shall not store any particular drum of waste, including those currently stored, for more than ten years. Permittee shall place a label on each drum of stored waste stating the date on which the drum was filled.
- B. Permittee shall place and maintain the stored waste drums on stable pallets without stacking the drums.

NO: 905256

SUPPLEMENTAL ABSTRACT OF TITLE TO:

Eight and Eight Hundred Sixty-Three One-Thousandths (8.863) acres of land out of Lot Seven (7) of the "HARRIS & WILSON TWO LEAGUE GRANT" in the City of Houston, on the North Side of Buffalo Bayou, in Harris County, Texas, described by field notes as follows:

The Southeast corner of this tract is marked by an iron pipe on the West property line of Lockwood Drive which pipe is North  $0^{\circ} 02'$  West 1519.4 feet from a bolt at intersection of center lines of Clinton Drive and Lockwood Drive and South  $89^{\circ} 58'$  West 40 feet from center line of Lockwood Drive;

THENCE along the West line of Lockwood Drive North  $0^{\circ} 02'$  West 714.67 feet to the intersection of the South line of Senora Street, an iron pipe for northeast corner;

THENCE West 540.17 feet along the South line of Senora Street to an iron pipe for North-west corner;

THENCE South  $0^{\circ} 02'$  East 714.97 feet along the East bank of a drainage ditch, an iron pipe set in a gulley for south-west corner;

THENCE North  $89^{\circ} 58'$  East 14.27 feet a pipe on East bank of Gulley on line and continuing North  $89^{\circ} 58'$  East a full distance of 540.17 feet to the iron pipe on West line of Lockwood Drive, the South-east corner and the place of Beginning.

PREPARED: SEPTEMBER 24th., 1937.

BY: TEXAS ABSTRACT COMPANY.

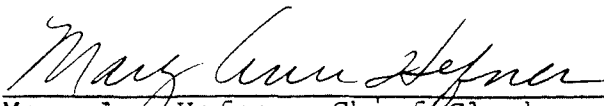
-0-



STATE OF TEXAS       X  
                          X  
COUNTY OF TRAVIS    X

I, Mary Ann Hefner, Chief Clerk of the Texas Water Commission of the Department of Water Resources, do hereby certify that the attached and foregoing is a true and correct copy of an Order of the Commission dated November 7, 1984, issuing Permit No. HW-50012-000 to Thornhill-Craver Division, Joy Manufacturing Company, together with a copy of Permit No. HW-50012-000, the origina order being on file in the office of the Commission.

Given under my hand and the seal of the Texas Water Commission, this the 7th day of November, 1984.

  
\_\_\_\_\_  
Mary Ann Hefner, Chief Clerk  
Texas Water Commission

## **REFERENCE 4**



TEXAS WATER DEVELOPMENT BOARD

TEXAS WATER COMMISSION

J. B. Hopkins, Chairman

J. S. M. Bledsoe

J. B. Bledsoe

March 7, 1985

Mr. Bill Leeper, P.E.  
 Chief Metallurgical Engineer  
 Thornhill-Craver Company  
 P. O. Box 1184  
 Houston, Texas 77251-1184

Dear Mr. Leeper:

Re: Thornhill-Craver Company, ISW Permit No. HW 50012

On February 7, 1985, Anne Christley of this Department, accompanied by yourself, conducted an industrial solid waste compliance inspection of your facility. The following deficiencies were noted regarding 40 CFR Part 264 and the Industrial Solid Waste Rules and Regulations as set forth in the Texas Administrative Code (TAC).

1. TAC Rule 335.6 (c) Notification Requirements

The Notice of Registration and the Permit had not been updated with the correct address. Changes in zip code assignments should be reported to this Agency when effective. Also, the tanks used to store waste oil, varsol, or coolants prior to shipment off-site should be listed on the Notice of Registration as solid waste management facilities. Requests to amend the registration and permit should be addressed to:

Texas Department of Water Resources  
 C/O Mr. Minor Hibbs  
 P. O. Box 13087  
 Austin, Texas 78711

2. TAC Rule 335.62 Hazardous Waste Determination

Waste oils and coolants generated from manufacturing parts at the facility must be tested for hazardous characteristics prior to shipment off-site for recovery, re-use or disposal. A one-time analysis would be sufficient if components of the oil and coolants generated do not change significantly. Representative samples of the various waste stream should be analyzed using the EP toxicity leachate method for metals outlined in 40 CFR Part 261.



3. Rule 40 CFR 264.15 (a) General Inspection Requirements

The inspection log did not include a section for the date and nature of any repairs or other remedial actions.

4. Rule 40 CFR Subpart G Closure Plan

The closure plan did not include all of the minimum requirements specified in 40 CFR 264.110-264.115.

5. Rule 40 CFR 264.13 Waste Analysis Plan

An adequate written waste analysis plan had not been maintained at the facility. The Part B application is not sufficient to comply with the requirements of a specific waste analysis plan. 40 CFR 264.13 (4) (b) outlines the minimum requirements for a waste analysis plan. Sampling and analysis methods should be EPA approved methods.

6. Rule 40 CFR 264.73 (b) (2) Operating Record

A written operating record had not been maintained at the facility. The location and quantity of hazardous waste should be maintained on file and updated each time waste is added to the storage area or drums are shipped offsite.

Please respond to this office in writing by April 8, 1985 with your plans and implementation schedule which will ensure corrective action of the above-listed deficiencies by May 15, 1985. If compliance is not attained by May 15, 1985, this matter will be referred to our Central Office in Austin for further action. If you have any questions, please contact Anne Christley at 713-479-5981.

Sincerely,



Merton J. Coloton, P.E.  
Supervisor, District 7

MJC:AC:nss

Enclosure:

Copy of inspection checklists

# HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

NEW ☒ UPDATE

TDWR ID: 50012 1. EPA ID: TXD008070161 INDUSTRY: THORNHILL DISTRICT: 07

2. INDUSTRY NAME: Thornhill Traver Company PHONE: (713) 672-1661

3. SITE ADDRESS: 1111 Lockwood Drive, Houston, TX ZIP: 77251 COUNTY: Harris

7. DATE SUBT: 03-15-85 FACILITY: GF 4. MAJOR/NONMAJOR: N 6. TYPE OF EVALUATION: EV (CEI-EV, EC; CME-GW; OTHER-CL, SW; SAMPLE-SA; FOLLOW UP-FO; RECORD REVIEW-RC, RF; FOR HIGH PRIORITY PLACE H IN 1ST BLOCK)

5. OF INITIAL EVALUATION: 02-07-85 RESPONSIBLE AGENCY: S

		E v a l		D e c i s i o n		Date Notice of Violation		Date Conference		Date Refer. to Austin for Enf.		Date High Prior. Determination		Date of Estim. Compliance		Date Response is Due for Nov.		Date of Actual Compliance		Resolv/Unre Complaint	
GW																					
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
CL	X	2																			
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
PT																					
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
MA	X																				
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
FI	X																				
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77
OT	X	2																			
56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77

COMMENTS: (COUNTY) 001 101 0060 0 ARC150 2 ARC62 2 ARC73B 2 ARC

WORK NO: 9091 NO OF SAMPLES: -0- SUBMITTED BY: Anne Christley

291985

## **REFERENCE 5**



April 18, 1985

JOY INDUSTRIAL EQUIPMENT COMPANY

PETROLEUM EQUIPMENT GROUP  
THORNHILL CRAVER DIVISION  
1111 LOCKWOOD DRIVE  
P. O. BOX 1184  
HOUSTON, TEXAS 77251-1184  
Telephone: (713) 672-1661  
Telex: 76-2195

Mr. Merton J. Coloton  
Supervisor, District 7  
4301 Center Street  
Deer Park, Texas 77536-6299

Re: Ann Christley's Visit of Feb. 7.  
Your letter of March 7  
Thornhill Craver Permit No.  
HW 50012

Dear Mr. Coloton:

In your letter you listed various items that needed to be done in order to be in compliance. Following is a reply to each of the items numbered in your letter:


1. (a) The permit has the correct name and address so no change is planned.  
  
(b) A letter has been sent to Mr. Minor Hibbs advising him of the name and address change to be made on the Notice of Registration No. 31157 and the description of the tanks used to store waste oil, varsol or coolants for Class II wastes. (See copy of letter attachment A.)
2. The Class II wastes are checked by the company that picks up the waste and verified that it is Class II before it is disposed. Per phone conversation with our disposal company they will write us a letter showing their analysis and outlining their procedures to verify that the wastes are Class II. In addition, we will have an independent lab check our wastes per 40CFR261 and have this information on file. Per Ann Christley the pesticide check is not needed but toxicity and heavy metals will be checked.
3. The inspection log is being changed and the revised log will be used starting on or before June 1, 1985.
4. We have purchased the Code of Federal Regulations CFR 40 parts 190 to 399 and will review the sections 264.110-264.115 and amend our closure plan as requested.

5. Our Part B was revised on March 9, 1983 and submitted to TDWR in Austin and approved. In it we describe the method for sampling and the analysis procedure recommended by E. F. HOUGHTON, the supplier of chemicals. These procedures have been used for a number of years and records of analysis are being maintained. In addition, our operations are constant and the chemicals have not changed so our wastes should be consistent. We will review 40CFR264.13 and determine what changes are needed.
6. The operating record you request is being maintained but in separate files. We will make a special file and list the items desired. The location of our Class I waste has not changed and the quantity increases about one 55 gallon drum a year. None has been shipped in four years and records are sent in to Austin every six months that contain that information.

Thank you for your help. The work that needs to be done as described in the various preceding paragraphs should be completed by May 31st.

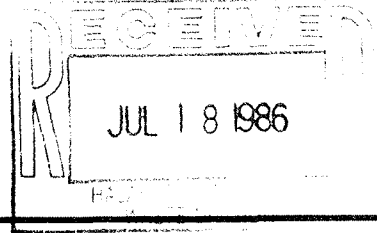
Yours very truly,

JOY MANUFACTURING COMPANY  
Thornhill Craver Division

  
W. A. Leeper, P. E.  
Chief Metallurgical Engineer

WAL/djb

## **REFERENCE 6**



# Texas Water Commission

## INTEROFFICE MEMORANDUM

TO : Luis Campos, Hazardous and Solid Waste Liaison  
Field Operations Division **DATE:** July 14, 1986

THRU :

FROM : Karen Bleam, Hazardous and Solid Waste Specialist  
Southeast Region, Deer Park Office

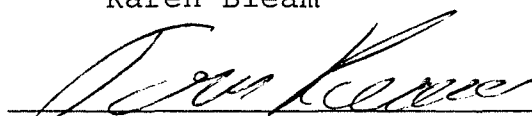
SUBJECT: Thornhill Craver Co., ISW Registration No. 31157,  
Permit No. HW-50012, "Special" Inspection of  
July 10, 1986

On July 10, 1986 an industrial solid waste "Special" inspection was conducted of the subject facility. The following problems were noted:

1. The Notice of Registration for the facility is not accurate. An additional waste stream, used lubricating oils, and an additional waste management facility, a set of two 350 gallon tanks for storage of waste oils, need to be included. Also, the contact person should be changed.
2. The facility is operating a permitted drum storage area for the storage of sodium cyanide wastes. The permit requires the company to maintain proper inspection logs, contingency plan, personnel training records, waste analysis plan, closure plan, and financial assurance. However, at the time of the inspection none of these documents could be located. A review of the previous inspection reports indicate the facility does have these documents, however, the new personnel in charge of them are unaware of their whereabouts.

A full RCRA inspection has been scheduled for August, 1986 at which time all violations present will be addressed.

Signed   
Karen Bleam

Approved   
Tom Kearns

TK/KB/np



## **REFERENCE 7**

# TEXAS WATER COMMISSION

Paul Hopkins, Chairman  
Ralph Raming, Commissioner  
John O. Houchins, Commissioner



Larry R. Soward, Executive Director  
Mary Ann Hefner, Chief Clerk  
James K. Rourke, Jr., General Counsel

October 3, 1986

Roy Ueckert  
Thornhill-Craver Co.  
1111 Lockwood Dr.  
Houston, Texas 77001

Dear Mr. Ueckert:

RE: Thornhill-Craver Co., ISW Registration No. 31157,  
Permit No. HW 50012

On September 24, 1986, Karen Bleam of this office accompanied by yourself and George Cunningham, conducted an industrial solid waste compliance inspection of the subject facility. The following deficiencies were noted:

1. 40 CFR Section 265.15 - Inspection Requirements  
The inspection schedule for the facility did not include provisions for the inspection of safety equipment and security devices.
2. 40 CFR Section 264.112 - Closure Plan  
The closure plan for the facility did not include a description of procedures for equipment decontamination or an estimated year of closure.
3. 40 CFR Section 264.175 - Storage of Containers  
The container storage area did not have a containment system for the collection of leaks or spills.

Please respond in writing to this office by October 31, 1986 with your plans and implementation schedule which will ensure corrective action of the above-listed deficiencies by November 15, 1986. If you have any questions, please contact Susan Ripley at (713)-479-5981.

Sincerely,

A handwritten signature in cursive script, appearing to read "Tom Kearns".

Tom Kearns  
Manager, Hazardous & Solid Waste  
Southeast Region, Deer Park Office

TK/KB/amh

## **REFERENCE 8**



**W-K-M DIVISION, JOY MANUFACTURING COMPANY**  
P.O. Box 2117, Houston, Texas 77252 713/498-8511 Telex 762919

November 19, 1986

Ms. Sonia Ralls  
Texas Water Commission  
Hazardous and Solid Waste Division  
P. O. Box 13087 Capitol Station  
Austin, Texas 78711

Dear Ms. Ralls:

Subject: RCRA Liability Coverage  
Thornhill Craver Division, HW 50012

As I explained in our telephone conversation of November 18, 1986, I have recently become involved in the environmental control activities at the Thornhill Craver Division of Joy Manufacturing Company. My involvement has come about as a result of a restructuring of the Joy Divisions whereby Thornhill Craver now reports to the W-K-M Division.

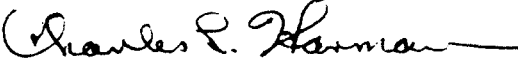
I must say that I was very surprised to discover that Thornhill Craver was registered as a storage facility for the hazardous waste, sodium cyanide. In my opinion, obtaining a registration as a storage facility was a serious mistake, and I will assure you that we will take immediate steps to get rid of the material presently stored, properly close the facility, and have the permit cancelled.

At this time, I am having samples analyzed so that we can determine how we should dispose of the existing five (5) drums of sodium cyanide. Once we have the analysis completed, we will contract with a permitted transporter and disposer to haul away and dispose of the waste. I anticipate that we will be rid of the stored waste by the end of December, 1986. At that time, we will discontinue long term storage at the Thornhill Craver facility.

In view of the above, it does not appear to be reasonable to go to the trouble and expense of trying to obtain the sudden liability insurance required by 40 CFR 265.147. Therefore, it would be greatly appreciated if you could see that no enforcement action is taken during the time we are closing the Thornhill Craver storage facility.

If you have any questions, please contact me at (713) 499-8511.

Very truly yours,

  
Charles L. Harman  
Senior Manufacturing  
Engineering Specialist

CLH/pb

## **REFERENCE 9**

## TEXAS WATER COMMISSION

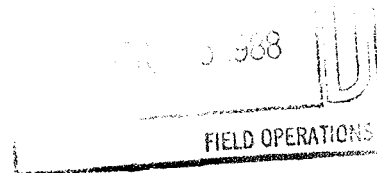
Paul Hopkins, Chairman  
Ralph Roming, Commissioner  
John O. Houchins, Commissioner



Larry R. Soward, Executive Director  
Mary Ann Hefner, Chief Clerk  
James K. Rourke, Jr., General Counsel

December 11, 1986

Mr. Charles L. Harman  
Engineering Specialist  
WKM Division  
Joy Manufacturing Company  
P.O. Box 2117  
Houston, Texas 77252



Re: RCRA Liability Coverage  
Thornhill Craver, SW 50012

Dear Mr. Harman:

In accordance with your letter of November 19, 1986, the Texas Water Commission will consider said letter as a written request to withdraw Thornhill Craver's permit no. 50012 and notice of intent to close as required by 31 TAC 305.67.

This action will result in full facility closure, requiring final closure plan approval, public notice and certification by both the owner/operator and an independent registered professional engineer upon completion of closure.

Please contact Mr. Ray Austin at 512/463-8173 for assistance in this closure process and closure plan approval.

The Texas Water Commission will hold the required liability coverage requirements in abeyance for 60 days pending final resolution of facility closure approval.

Sincerely,

A handwritten signature in dark ink, appearing to read "Russell S. Kimble".

Russell S. Kimble, Chief  
Reports and Management Section  
Hazardous and Solid Waste Division

SR:ok

cc: Texas Water Commission Southeast Region Office - Deer Park

## **REFERENCE 10**



# McCRORY ENGINEERING, INC.

2400 CENTRAL PARKWAY, STE. H  
HOUSTON, TEXAS 77092  
(713) 680-0773

June 2, 1987

WKM Division  
Cooper Industries  
P.O. Box 2117  
Houston, TX 77252

Attention: Mr. Charles Harman

## INSPECTION CERTIFICATION

Thornhill Craver ISW Permit HW50012

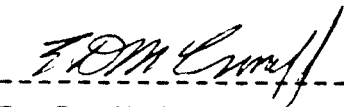
I, **E. D. McCrory, Jr. P.E.**, hereby certify that I have this day personally inspected the hazardous waste area at the Thornhill Craver facility located at 1111 Lockwood Drive, Houston, Texas.

All steps for decontamination as outlined in the **CLOSURE AND PART CLOSURE PLAN** have been completed.

Cleanup and equipment decontamination have been carried out in a satisfactory manner, and the waste shipped via licensed transporter to an approved disposal company.

As a last step, the Shipping Manifest and Notification of Acknowledgement were inspected to verify final disposal of the waste.

Certified this 2nd day of June 1987

  
-----  
E. D. McCrory, Jr. P.E.  
State of Texas Registration No. 36647



## **REFERENCE 11**

Thornhill Craver  
HW-50012

TEXAS WATER COMMISSION



Paul Hopkins, Chairman  
John O. Houchins, Commissioner  
B. J. Wynne, III, Commissioner

James K. Rourke, Jr., General Counsel  
Michael E. Field, Chief Examiner  
Karen A. Phillips, Chief Clerk

Larry R. Soward, Executive Director

October 20, 1987

Mr. Charles L. Harman  
Flow Control Division  
Cooper Industries  
P.O. Box 2117  
Houston, Texas 77252-2117

Re: Thornhill Craver  
Hazardous Waste Storage Permit No. HW-50012

In accordance with your letters of July 19, 1987 and November 19, 1986 concerning permit withdrawal, this letter constitutes revocation of the subject hazardous waste permit pursuant to Title 31 of the Texas Administrative Code, Section 305.67.

Should you have any questions or comments, please contact the Hazardous and Solid Waste Permits Section at AC512/463-8174.

Sincerely,

A handwritten signature in cursive script that reads "Larry R. Soward".

Larry R. Soward  
Executive Director

cc: TWC Southeast Region Office - Deer Park  
Karen A. Phillips - Chief Clerk, TWC

## **REFERENCE 12**

## TEXAS WATER COMMISSION

TWC Reg.: 31157

C.O. Use Only

APR 06 1988

SOLID WASTE INSPECTION REPORT  
For RCRA Permitted FacilitiesHW Permit: 50012Issued: 11-07-846488 JAB

## INSPECTION COVERSHEET

TWC District 07EPA ID No. TXD008070161

Commercial Waste Facility

Govt. Facility

NAME OF PERMITTEE THORNHILL - CRAVER, INC.MAILING ADDRESS P.O. Box 1184 HOUSTON, TX 77251 Tel. 713-672-1661SITE LOCATION 1111 LOCKWOOD DRIVE HOUSTON, TX Tel. 713-672-1661COUNTY HARRIS TYPE OF INDUSTRYOPERATIONAL STATUS: INACTIVE (UNDERGONE FULL FACILITY CLOSURE)

CURRENT WASTE MANAGEMENT (Haz.-"H"; Class I Nonhaz.-"NH"; Class II-"II"; Class III-"III")

Generate H, II, III Treat \_\_\_\_\_ Store H Dispose \_\_\_\_\_

Transport \_\_\_\_\_

HW Permitted Facilities:(circle) ☒ C T SI WP LT LF I TT TR O

HW Interim-Status Facilities: C T SI WP LT LF I TT TR O

HW Permit-Exempt Facilities: C T

Non-Hazardous Waste Facilities: C ☒ T SI WP LT LF I TT TR OTYPE OF INSPECTION:(circle) ☒ CEI GW CL CD SA FO OTInspector's Name and Title LAURIE SCHMIDT, FIELD INVESTIGATORInspection Participants KERRY KING, RELOCATION PROJECT MGR., COOPER  
INDUSTRIDate(s) of Inspection 02-11-88Signed: Laurie Schmidt 03-18-88  
Inspector DateApproved: W. Van Evers 03-31-88  
District Manager

RECEIVED

TEXAS WATER COMMISSION  
Solid Waste Inspection Report  
For Permitted Facilities  
CONTENTS SHEET

TWC Reg. 31157  
HW Permit 50012

- ☒ 1. Data Entry Form 0814
- ☒ 2. Inspection Coversheet
- ☒ 3. Permit Compliance Checklist
- ☒ 4. Facility Standards Checklist
- ☒ 5. Generators Checklist
- 6. Permitted Units Checklists
  - ☒ Containers (C)
  - ☐ Tanks (T)
  - ☐ Surface Impoundments (SI)
  - ☐ Waste Piles (WP)
  - ☐ Land Treatment (LT)
  - ☐ Landfills (LF)
  - ☐ Incinerators (I)
  - ☐ Other (O)
- 7. Non-Permitted Units Checklists
  - ☐ Containers (C)
  - ☒ Tanks (T)
  - ☐ Surface Impoundments (SI)
  - ☐ Waste Piles (WP)
  - ☐ Land Treatment (LT)
  - ☐ Landfills (LF)
  - ☐ Incinerators (I)
  - ☐ Thermal Treatment (TT)
  - ☐ Chem, Phy, Biol. Treatment (TR)
  - ☐ Other (O)
- ☐ 8. Permit Compliance Plan Review Sheet
- ☐ 9. Closure/Post Closure Checklist
- ☐ 10. Closure-In-Progress Checklist
- ☒ 11. TWC Registration
- ☒ 12. Maps, Plans, Sketches
- ☐ 13. Photographs
- ☐ 14. Sample Analysis Results
- ☐ 15. Notice of Violation (NOV) Letter
- ☒ 16. Interoffice Memorandum (IOM)
- ☐ 17. Enforcement Referral Report
- ☒ 18. Other (describe): \_\_\_\_\_

\* NOTE: If a required checklist is omitted, explain: The permit for this site was terminated 10-20-87 by the C.O. The permitted facility was certified closed by C.O. 07-31-87. As of 02-01-88, T-C had closed out the remaining facilities and relinquished control of the site to the new owners.

DWD550

TEXAS DEPARTMENT OF WATER RESOURCES  
NOTICE OF REGISTRATION  
INDUSTRIAL SOLID WASTE GENERATION/DISPOSAL

05-15-85

THIS IS NOT A PERMIT AND DOES NOT CONSTITUTE AUTHORIZATION OF ANY WASTE MANAGEMENT ACTIVITIES OR FACILITIES LISTED BELOW. REQUIREMENTS FOR SOLID WASTE MANAGEMENT ARE PROVIDED BY TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TEXAS DEPARTMENT OF WATER RESOURCES (TDWR). CHANGES OR ADDITIONS TO WASTE MANAGEMENT METHODS REFERRED TO IN THIS NOTICE REQUIRE WRITTEN NOTIFICATION TO THE TDWR.

DATE OF NOTICE: 05-15-85

REGISTRATION DATE: 10-03-77

REGISTRATION NUMBER: 31157

EPA I.D. NUMBER: TX0008070161

THE REGISTRATION NUMBER PROVIDES ACCESS TO STORED INFORMATION PERTAINING TO YOUR OPERATION. PLEASE REFER TO THAT NUMBER IN ANY CORRESPONDENCE.

COMPANY NAME: JOY MANUFACTURING COMPANY

MAILING ADDRESS: THORNHILL CRAVER DIVISION

P.O.BOX 1184

HOUSTON

TX 77251-1184

GENERATING SITE LOCATION:

1111 LOCKWOOD DRIVE, HOUSTON, TEXAS

CONTACT PERSON: L.R. SWANSON

PHONE: (713) 672-1661

NUMBER OF EMPLOYEES: 100 - 249

TDWR DISTRICT: 07

REGISTRATION STATUS: ACTIVE

HAZARDOUS WASTE STATUS: GENERATOR/TSD FACILITY

I. WASTE GENERATED:

WASTE NUMBER	DESCRIPTION	CLASS	CODE	DISPOSITION
001	PLANT REFUSE, GENERAL MISC.	II	279760	OFF-SITE
002	OILS, WASTE	II	210450	OFF-SITE
003	METAL SCRAP	III	370350	OFF-SITE
004	SODIUM CYANIDE	IV	970530	ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS):

II. SHIPPING/REPORTING: PURSUANT TO TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TDWR PERTAINING TO INDUSTRIAL SOLID WASTE MANAGEMENT, ISSUANCE OF MANIFESTS AND MONTHLY REPORTING ARE REQUIRED FOR OFF-SITE STORAGE/PROCESSING/DISPOSAL OF THE FOLLOWING CLASS I WASTES LISTED IN PART I.

PREPARE A MONTHLY WASTE SHIPMENT SUMMARY AND SUBMIT IT ALONG WITH THE GREEN COPY OF THE MANIFEST(S) FOR EACH MONTH THAT SHIPMENTS OF THE FOLLOWING WASTE(S) ARE MADE. NO MONTHLY WASTE SHIPMENT SUMMARY IS REQUIRED FOR MONTHS WHEN SHIPMENTS ARE NOT MADE.

004 970530 SODIUM CYANIDE

III. ON-SITE WASTE MANAGEMENT FACILITIES:

FAC NO.	FACILITY	STATUS
01	CONTAINER STORAGE AREA STORAGE OF WASTE NUMBER(S) 004	<del>ACTIVE</del> closed by P.E. 06-02-87 official W/C.O. 07-31-87
02	TANK (SUB-SURFACE) STORAGE OF WASTE NUMBER(S) 002 1500 gallon concrete UST	<del>ACTIVE</del> closed out by Rollins 12-22-87
03	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 002 EXCESS CAPACITY 325 gallons above ground steel	<del>ACTIVE</del> inactive
04	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 002 EXCESS CAPACITY 325 gallons above ground steel	<del>ACTIVE</del> inactive

UNLESS OTHERWISE STATED ABOVE, FACILITIES ARE LOCATED  
AT 1111 LOCKWOOD DRIVE, HOUSTON, TEXAS  
COUNTY OF HARRIS

IV. RECORDS.

- A. FOR PURPOSES OF FILING ANNUAL REPORTS PURSUANT TO TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TDWR PERTAINING TO INDUSTRIAL SOLID WASTE MANAGEMENT, RECORDS SHOULD BE MAINTAINED FOR STORAGE, PROCESSING AND/OR DISPOSAL OF THE FOLLOWING WASTE(S) LISTED IN PART I:

001 279760 PLANT REFUSE, GENERAL MISC.

002 210450 OILS, WASTE

CE OF REGISTRATION (CONTINUED)  
ISTRATION NUMBER: 157  
OMPANY NAME: JOY MANUFACTURING COMPANY

PAGE 3

004 970530 SODIUM CYANIDE

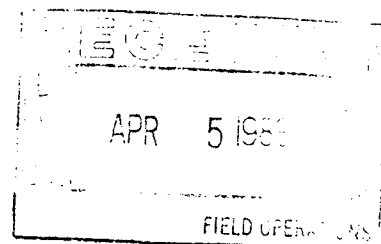


## **REFERENCE 13**

# Texas Water Commission

## INTEROFFICE MEMORANDUM

TO : Bobby Whitefield, Section Chief, Information and DATE: 3/24/88  
Technical Services, Hazardous & Solid Waste Division  
THRU <sup>for</sup> Luis Campos, Hazardous & Solid Waste Coordinator  
Field Operations Division  
FROM : Laurie Schmidt, Field Investigator  
Southeast Region, Deer Park Office  
SUBJECT: Thornhill-Craver, Inc.  
ISW Registration Number 31157



An industrial solid waste compliance inspection was conducted at Thornhill-Craver, Inc. on February 11, 1988. The following is a summary of that inspection.

### BACKGROUND INFORMATION

Thornhill-Craver, Inc. (T-C) utilizes a nitriting process to harden the surfaces of steel tools used in the oil industry. A permit (HW-50012) was issued to T-C on 11-07-84 for container storage of waste sodium cyanide associated with this process.

On 11-19-86, T-C submitted a request to withdraw their permit and notified the Texas Water Commission (TWC) of their intent to discontinue the storage of sodium cyanide at their facility (see Attachment #1). T-C stated that immediate steps would be taken to dispose of all sodium cyanide wastes being stored on-site and properly close the permitted container storage area. TWC acknowledged this notification of closure and request for permit withdrawal on 12-11-86 (see Attachment #2). T-C submitted the final closure plans and certification of closure to the TWC on 07-29-87 (see Attachment #3). TWC acknowledged closure of the permitted facility on 07-31-87.

On 10-20-87, the TWC granted T-C's request and revoked the permit (see Attachment #4). A letter was sent by TWC to EPA notifying them of the change of status of the T-C site (see Attachment #5). All processing of tools was halted in mid-December 1987. The site was turned over to the new owners on 02-01-88. T-C was bought out by Cooper Industries. An entirely different operation is planned for the site now.

### FINDINGS

Four (4) on-site waste management facilities were listed on the Notice of Registration. Due to closure of the entire facility, no checklists were filled out for the inspection. However, a visual inspection of each of the on-site waste management facilities was conducted. The status of each facility is summarized below:

Facility 01 -- Container storage area for waste #004, sodium cyanide waste.  
(CLOSED) This facility was inspected and closed by T-C on 06-02-87.  
The drum storage area was certified closed on 07-31-87 (see Attachment #6).

Bobby Whitefield  
Page -2-  
March 24, 1988


Facility 02 -- 1500 gallon underground storage tank for waste #002, waste  
(CLOSED) oil. Rollins Environmental Services contracted for the  
cleanup and disposal of all wastes and equipment associated  
with this facility. All liquids were disposed of by  
incineration. The concrete tank and surrounding soil were  
disposed of in a landfill (see Attachment #7).

Facility 03 -- 325 gallon above-ground steel tank for excess waste oil, waste  
(INACTIVE) #002. This facility was leased from Force, Inc. and used for  
storage of excess waste oil. The last shipment of oil  
from this tank for T-C was made on 02-05-88. The tank will  
remain in place for lease to the next site owner.


Facility 04 -- Additional 325 gallon above-ground steel tank for same pur-  
(INACTIVE) poses as Facility 03.

T-C ceased manufacture of all products during December of 1987. On 02-01-88,  
T-C relinquished control of the site to Cooper Industries. A visual inspection  
of all on-site waste management facilities determined that the site was  
properly closed.

Signed:

  
Laurie Schmidt  
Field Investigator

Approved:

  
W. J. Van Evers  
Manager, Hazardous & Solid Waste

WJV/LS/amh

## **REFERENCE 14**

31157

# TEXAS WATER COMMISSION

Paul Hopkins, Chairman  
John O. Houchins, Commissioner  
B. J. Wynne, III, Commissioner



J. D. Head, General Counsel  
Michael E. Field, Chief Examiner  
Karen A. Phillips, Chief Clerk

Allen Beinke, Executive Director

May 6, 1988

Mr. Charles L. Harman  
Engineering Specialist  
Cooper Industries  
Thornhill-Craver Division  
P. O. Box 2117  
Houston, Texas 77252-2117

Re: Certification of Closure, Facility 01  
Thornhill Craver, SWR No. 31157

Dear Mr. Harman:

The Texas Water Commission has reviewed your owner/operator's closure certification dated July 29, 1987 and the certification from E.D. McCory, Jr., P.E. a registered professional engineer dated June 2, 1987. It appears that the container storage area has been properly certified as closed in accordance with the closure plan approved November 7, 1984.

If you have any questions regarding this matter, please contact Sonia Ralls of our Hazardous and Solid Waste Division at 512/463-7995.

Sincerely,

A handwritten signature in cursive script that reads "Samuel Pole".

Samuel B. Pole, Chief  
Hazardous and Solid Waste Enforcement Section  
Hazardous and Solid Waste Division

SR/da

cc: TWC District 7 Office  
Ken Zarker, TWC Reports and Information Management Unit  
Ed Hatton, TWC Compliance Assistance Unit  
Steve Minick, TWC Fiscal Services Section

## **ATTACHMENTS**

# **ENVIRONMENTAL JUSTICE REPORT**

POTENTIAL ENVIRONMENTAL JUSTICE (EJ) INDEX PILOT

Date : 21 Jun 95 11:21:43 Wednesday  
Requestor : TAT TAT  
Site Id Number : TXD008070161  
Site Name : ENERGY SERVICES GROUP  
County : HARRIS  
State/County FIPS Code : 48201  
Location : -95 19 0 29 46 7  
Quality Assurance Resource : 6

ENERGY SERVICES GROUP  
50 square mile study area

Minority Ranking Value (DVMAV) : 5	Percent Minority	= 90.7
Economic Ranking Value (DVECO) : 4	Percent Economically Stressed	= 49.8
Population Ranking Value (PF) : 3	Total Population	= 189953

Potential Environmental Justice Index (DVMAV \* DVECO \* PF) = 60

ENERGY SERVICES GROUP  
1 square mile study area

Minority Ranking Value (DVMAV) : 5	Percent Minority	= 97.7
Economic Ranking Value (DVECO) : 5	Percent Economically Stressed	= 67.3
Population Ranking Value (PF) : 3	Total Population	= 4185

Potential Environmental Justice Index (DVMAV \* DVECO \* PF) = 75

METHODOLOGY CRITERIA

Environmental Justice Indexes are indicators of potential EJ concern. 1990 Census data for a Study Area is evaluated and ranked in relationship to state percentages. Ranking variables are multiplied to produce an index for prioritizing applications. The ranking variables are:

Minority Status, Degree of Vulnerability (DVMAV),  
Economic Status, Degree of Vulnerability (DVECO),  
and Total Population, Population Factor (PF).

MINORITY STATUS (DVMAV) - For TX the percent minority is 39.4%.

ECONOMIC STATUS (DVECO) - Economically Stressed is defined as Households making less than \$15,000 a year. For TX the percent economically stressed is 27.6%.

The Methodology for ranking values associated with Degrees of Vulnerability is

Ranking	Criteria
1	<= the State Percentage
2	> the State Percentage but <= 1.33 times the State %



- |   |   |
|---|---|
| 3 | > 1.33 times the State Percentage but <= 1.66 times the State % |
| 4 | > 1.66 times the State Percentage but <= 1.99 times the State % |
| 5 | >= 2 times the State %  |

#### POPULATION RANKING FACTOR

Total Population is ranked using the following criteria.

Ranking	Criteria	(evaluated on a 1 square mile basis)
---------	----------	--------------------------------------

- |       |                                    |
|-------|------------------------------------|
| ----- | -----                              |
| 0     | Total Population = 0               |
| 1     | Total Population > 0 and < 200     |
| 2     | Total Population > 200 and < 1000  |
| 3     | Total Population > 1000 and < 5000 |
| 4     | Total Population > 5000            |

#### Reference for Quality Assurance Resources

- |   |                               |    |                                  |
|---|-------------------------------|----|----------------------------------|
| 1 | Personal Verification         | 7  | AIRS                             |
| 2 | Reconciliation with Quad maps | 8  | PCS                              |
| 3 | Reported from archived files  | 9  | GIS Verified                     |
| 4 | TRIS                          | 10 | Professional Judgement           |
| 5 | RCRIS                         | 11 | Federal Facility Tracking System |
| 6 | CERCLIS                       |    |                                  |